



#11

SEQUENCE LISTING

<110> EVANS, RONALD M.

<120> NOVEL STEROID-ACTIVATED NUCLEAR RECEPTORS AND USES THEREFOR

<130> SALK2270-5

<140> 10/081,555

<141> 2002-02-20

<150> 09/458,366

<151> 1999-12-09

<150> 09/227,718

<151> 1999-01-08

<150> 09/005,286

<151> 1998-01-09

<160> 48

<170> PatentIn Ver. 2.1

<210> 1

<211> 2068

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (583)..(1884)

<220>

<221> modified_base

<222> (1263)

<223> a, c, t, or g

<400> 1

ggcacgagga gatcttagtt caaatataatg ttgcctctag tggtaaagga cagagaccct 60

cagactgatg aaatgcgctc agaattactt agacaaagcg gatatttgcc actctcttcc 120

ccttttcctg tgttttgtt gtgaagagac ctgaaagaaa aaagttaggga gaacataatg 180

agaacaata cggtaatctc ttcatttgc agttcaagtg ctggacttgg gacttaggag 240

ggccaatgga gccgcttagt gcctacatct gacttggact gaaatatagg tgagagacaa 300

gattgtctca tatccgggaa aatcataacc tatgactagg acgggaagag gaagcactgc 360

ctttacttca gtggaaatct cggcctcagc ctgcaagcca agtgttcaca gtgagaaaaag 420

caagagaata agctaatact cctgtcctgaa acaaggcagc ggctccttgg taaagctact 480

ccttgatcga tcctttgcac cggattgttc aaagtggacc ccaggggaga agtcggagca 540

aagaacttac caccaagcag tccaaaggc ccagaagcaa ac ctg gag gtg aga Met Glu Val Arg	594
1	
ccc aaa gaa agc tgg aac cat gct gac ttt gta cac tgt gag gac aca Pro Lys Glu Ser Trp Asn His Ala Asp Phe Val His Cys Glu Asp Thr 5 10 15 20	642
gag tct gtt cct gga aag ccc agt gtc aac gca gat gag gaa gtc gga Glu Ser Val Pro Gly Lys Pro Ser Val Asn Ala Asp Glu Glu Val Gly 25 30 35	690
ggc ccc caa atc tgc cgt gta tgt ggg gac aag gcc act ggc tat cac Gly Pro Gln Ile Cys Arg Val Cys Gly Asp Lys Ala Thr Gly Tyr His 40 45 50	738
tcc aat gtc atg aca tgt gaa gga tgc aag ggc ttt ttc agg agg gcc Phe Asn Val Met Thr Cys Glu Gly Cys Lys Gly Phe Phe Arg Arg Ala 55 60 65	786
atg aaa cgc aac gcc cgg ctg agg tgc ccc ttc cgg aag ggc gcc tgc Met Lys Arg Asn Ala Arg Leu Arg Cys Pro Phe Arg Lys Gly Ala Cys 70 75 80	834
gag atc acc cgg aag acc cgg cga cag tgc cag gcc tgc cgc ctg cgc Glu Ile Thr Arg Lys Thr Arg Arg Gln Cys Gln Ala Cys Arg Leu Arg 85 90 95 100	882
aag tgc ctg gag agc ggc atg aag aag gag atg atc atg tcc gac gag Lys Cys Leu Glu Ser Gly Met Lys Glu Met Ile Met Ser Asp Glu 105 110 115	930
gcc gtg gag gag agg cgg gcc ttg atc aag cgg aag aaa agt gaa cgg Ala Val Glu Glu Arg Arg Ala Leu Ile Lys Arg Lys Ser Glu Arg 120 125 130	978
aca ggg act cag cca ctg gga gtg cag ggg ctg aca gag gag cag cgg Thr Gly Thr Gln Pro Leu Gly Val Gln Gly Leu Thr Glu Glu Gln Arg 135 140 145	1026
atg atg atc agg gag ctg atg gac gct cag atg aaa acc ttt gac act Met Met Ile Arg Glu Leu Met Asp Ala Gln Met Lys Thr Phe Asp Thr 150 155 160	1074
acc ttc tcc cat ttc aag aat ttc cgg ctg cca ggg gtg ctt agc agt Thr Phe Ser His Phe Lys Asn Phe Arg Leu Pro Gly Val Leu Ser Ser 165 170 175 180	1122
ggc tgc gag ttg cca gag tct ctg cag gcc cca tcg agg gaa gaa gct Gly Cys Glu Leu Pro Glu Ser Leu Gln Ala Pro Ser Arg Glu Glu Ala 185 190 195	1170
gcc aag tgg agc cag gtc cgg aaa gat ctg tgc tct ttg aag gtc tct Ala Lys Trp Ser Gln Val Arg Lys Asp Leu Cys Ser Leu Lys Val Ser 200 205 210	1218

ctg cag ctg cgg ggg gag gat ggc agt gtc tgg aac tac aaa ccc cca Leu Gln Leu Arg Gly Glu Asp Gly Ser Val Trp Asn Tyr Lys Pro Pro	215	220	225	1266
gcc gac agt ggc ggg aaa gag atc ttc tcc ctg ctg ccc cac atg gct Ala Asp Ser Gly Gly Lys Glu Ile Phe Ser Leu Leu Pro His Met Ala	230	235	240	1314
gac atg tca acc tac atg ttc aaa ggc atc atc agc ttt gcc aaa gtc Asp Met Ser Thr Tyr Met Phe Lys Gly Ile Ile Ser Phe Ala Lys Val	245	250	255	1362
atc tcc tac ttc agg gac ttg ccc atc gag gac cag atc tcc ctg ctg Ile Ser Tyr Phe Arg Asp Leu Pro Ile Glu Asp Gln Ile Ser Leu Leu	265	270	275	1410
aag ggg gcc gct ttc gag ctg tgt caa ctg aga ttc aac aca gtg ttc Lys Gly Ala Ala Phe Glu Leu Cys Gln Leu Arg Phe Asn Thr Val Phe	280	285	290	1458
aac gcg gag act gga acc tgg gag tgt ggc cgg ctg tcc tac tgc ttg Asn Ala Glu Thr Gly Thr Trp Glu Cys Gly Arg Leu Ser Tyr Cys Leu	295	300	305	1506
gaa gac act gca ggt ggc ttc cag caa ctt cta ctg gag ccc atg ctg Glu Asp Thr Ala Gly Gly Phe Gln Gln Leu Leu Leu Glu Pro Met Leu	310	315	320	1554
aaa ttc cac tac atg ctg aag aag ctg cag ctg cat gag gag gag tat Lys Phe His Tyr Met Leu Lys Lys Leu Gln Leu His Glu Glu Glu Tyr	325	330	335	1602
gtg ctg atg cag gcc atc tcc ctc ttc tcc cca gac cgc cca ggt gtg Val Leu Met Gln Ala Ile Ser Leu Phe Ser Pro Asp Arg Pro Gly Val	345	350	355	1650
ctg cag cac cgc gtg gtg gac cag ctg cag gag caa ttc gcc att act Leu Gln His Arg Val Val Asp Gln Leu Gln Glu Gln Phe Ala Ile Thr	360	365	370	1698
ctg aag tcc tac att gaa tgc aat cgg ccc cag cct gct cat agg ttc Leu Lys Ser Tyr Ile Glu Cys Asn Arg Pro Gln Pro Ala His Arg Phe	375	380	385	1746
ttg ttc ctg aag atc atg gct atg ctc acc gag ctc cgc agc atc aat Leu Phe Leu Lys Ile Met Ala Met Leu Thr Glu Leu Arg Ser Ile Asn	390	395	400	1794
gct cag cac acc cag cgg ctg ctg cgc atc cag gac ata cac ccc ttt Ala Gln His Thr Gln Arg Leu Leu Arg Ile Gln Asp Ile His Pro Phe	405	410	415	1842
gct acg ccc ctc atg cag gag ttg ttc ggt atc aca ggt agc tga Ala Thr Pro Leu Met Gln Glu Leu Phe Gly Ile Thr Gly Ser	425	430		1887
gtggctgtcc ttgggtgaca cctccgagag gtagttagac ccagagccct ctgagtcgcc				1947

actccccggc caagacagat ggacactgcc aagagccgac aatgcctgc tggcctgtct 2007
 ccctaggaa-ttcctgctat gacagctggc tagcattcct caggaaggac atggggtgcc 2067
 c 2068

<210> 2
 <211> 434
 <212> PRT
 <213> Homo sapiens

<220>
 <221> MOD_RES
 <222> (227)
 <223> Threonine

<400> 2
 Met Glu Val Arg Pro Lys Glu Ser Trp Asn His Ala Asp Phe Val His
 1 5 10 15

Cys Glu Asp Thr Glu Ser Val Pro Gly Lys Pro Ser Val Asn Ala Asp
 20 25 30

Glu Glu Val Gly Gly Pro Gln Ile Cys Arg Val Cys Gly Asp Lys Ala
 35 40 45

Thr Gly Tyr His Phe Asn Val Met Thr Cys Glu Gly Cys Lys Gly Phe
 50 55 60

Phe Arg Arg Ala Met Lys Arg Asn Ala Arg Leu Arg Cys Pro Phe Arg
 65 70 75 80

Lys Gly Ala Cys Glu Ile Thr Arg Lys Thr Arg Arg Gln Cys Gln Ala
 85 90 95

Cys Arg Leu Arg Lys Cys Leu Glu Ser Gly Met Lys Lys Glu Met Ile
 100 105 110

Met Ser Asp Glu Ala Val Glu Glu Arg Arg Ala Leu Ile Lys Arg Lys
 115 120 125

Lys Ser Glu Arg Thr Gly Thr Gln Pro Leu Gly Val Gln Gly Leu Thr
 130 135 140

Glu Glu Gln Arg Met Met Ile Arg Glu Leu Met Asp Ala Gln Met Lys
 145 150 155 160

Thr Phe Asp Thr Thr Phe Ser His Phe Lys Asn Phe Arg Leu Pro Gly
 165 170 175

Val Leu Ser Ser Gly Cys Glu Leu Pro Glu Ser Leu Gln Ala Pro Ser
 180 185 190

Arg Glu Glu Ala Ala Lys Trp Ser Gln Val Arg Lys Asp Leu Cys Ser
 195 200 205

Leu Lys Val Ser Leu Gln Leu Arg Gly Glu Asp Gly Ser Val Trp Asn
 210 215 220
 Tyr Lys Pro Pro Ala Asp Ser Gly Gly Lys Glu Ile Phe Ser Leu Leu
 225 230 235 240
 Pro His Met Ala Asp Met Ser Thr Tyr Met Phe Lys Gly Ile Ile Ser
 245 250 255
 Phe Ala Lys Val Ile Ser Tyr Phe Arg Asp Leu Pro Ile Glu Asp Gln
 260 265 270
 Ile Ser Leu Leu Lys Gly Ala Ala Phe Glu Leu Cys Gln Leu Arg Phe
 275 280 285
 Asn Thr Val Phe Asn Ala Glu Thr Gly Thr Trp Glu Cys Gly Arg Leu
 290 295 300
 Ser Tyr Cys Leu Glu Asp Thr Ala Gly Gly Phe Gln Gln Leu Leu Leu
 305 310 315 320
 Glu Pro Met Leu Lys Phe His Tyr Met Leu Lys Lys Leu Gln Leu His
 325 330 335
 Glu Glu Glu Tyr Val Leu Met Gln Ala Ile Ser Leu Phe Ser Pro Asp
 340 345 350
 Arg Pro Gly Val Leu Gln His Arg Val Val Asp Gln Leu Gln Glu Gln
 355 360 365
 Phe Ala Ile Thr Leu Lys Ser Tyr Ile Glu Cys Asn Arg Pro Gln Pro
 370 375 380
 Ala His Arg Phe Leu Phe Leu Lys Ile Met Ala Met Leu Thr Glu Leu
 385 390 395 400
 Arg Ser Ile Asn Ala Gln His Thr Gln Arg Leu Leu Arg Ile Gln Asp
 405 410 415
 Ile His Pro Phe Ala Thr Pro Leu Met Gln Glu Leu Phe Gly Ile Thr
 420 425 430
 Gly Ser

<210> 3
 <211> 25
 <212> DNA
 <213>. Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Putative SXR
 response element from the steroid hydroxylase,
 rCYP3A1

<400> 3
 tagacagttc atgaagttca tctac

<210> 4
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Putative SXR
response element from the steroid hydroxylase,
rCYP3A2

<400> 4 taagcagttc ataaagttca tctac 25

<210> 5
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Putative SXR
response element from the steroid hydroxylase,
rUGT1A6

<400> 5 actgttagttc ataaagttca catgg 25

<210> 6
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Putative SXR
response element from the steroid hydroxylase,
rbCYP2C1

<400> 6 caatcagttc aacagggttc accaat 26

<210> 7
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Putative SXR
response element from the steroid hydroxylase,
rP450R

<400> 7 cacaggtgag ctgaggccag cagcaggtcg aaa 33

<210> 8
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Putative SXR
response element from the steroid hydroxylase,
rCYP2A1

<400> 8
gtgcagggttc aactggaggt caacatg

27

<210> 9
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Putative SXR
response element from the steroid hydroxylase,
rCYP2A2

<400> 9
gtgctgggttc aactggaggt cagtatg

27

<210> 10
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Putative SXR
response element from the steroid hydroxylase,
rCYP2C6

<400> 10
agtcttagttc agtgggggtt cagtctt

27

<210> 11
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Putative SXR
response element from the steroid hydroxylase,
hCYP2E1

<400> 11
gagatgggttc aaggaagggt cattaac

27

<210> 12
<211> 26

<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Direct repeat
with spacer of 0 nucleotides

<400> 12
catagtcagg tcaaggtcag atcaac 26

<210> 13
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Direct repeat
with spacer of 1 nucleotides

<400> 13
catagtcagg tcataggta gatcaac 27

<210> 14
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Direct repeat
with spacer of 2 nucleotides

<400> 14
catagtcagg tcaataggta agatcaac 28

<210> 15
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Direct repeat
with spacer of 3 nucleotides

<400> 15
catagtcagg tcataataggta cagatcaac 29

<210> 16
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Direct repeat
with spacer of 4 nucleotides

<400> 16
catagtcagg tcatataagg tcagatcaac 30

<210> 17
<211> 31
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Direct repeat
with spacer of 5 nucleotides

<400> 17
catagtcagg tcatatatag gtcagatcaa c 31

<210> 18
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Direct repeat
with spacer of 6 nucleotides

<400> 18
catagtcagg tcatatataa ggtcaagatc aac 33

<210> 19
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Direct repeat
with spacer of 7 nucleotides

<400> 19
catagtcagg tcatatatat aggtcagatc aac 33

<210> 20
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Direct repeat
with spacer of 10 nucleotides

<400> 20
catagtcagg tcatatatat ataaggatc aac 36

<210> 21
<211> 41
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Direct repeat
with spacer of 15 nucleotides

<400> 21
catagtcagg tcatagtagt agtagtagag gtcagatcaa c

41

<210> 22
<211> 17
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Example of a
response element suitable for practice of the
invention method

<220>
<221> modified_base
<222> (7)..(11)
<223> This region may encompass 5, 4 or 3 nucleotides,
independently selected from a, c, t or g

<400> 22
agtccannnn ntgaact

17

<210> 23
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Example of a
response element suitable for practice of the
invention method

<220>
<221> modified_base
<222> (7)..(12)
<223> a, c, t or g

<400> 23
tgaactnnnn nnaggtca

18

<210> 24
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 24
tgaactcaaa ggaggtca

18

<210> 25
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Inverted
repeat response element with spacer of 0
nucleotides

<400> 25
agcttaggtc atgaccta

18

<210> 26
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Inverted
repeat response element with spacer of 1
nucleotides

<400> 26
agcttaggtc agtgaccta

19

<210> 27
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Inverted
repeat response element with spacer of 2
nucleotides

<400> 27
agcttaggtc acgtgaccta

20

<210> 28
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Inverted
repeat response element with spacer of 3
nucleotides

<400> 28
agcttaggtc acagtgacct a

21

<210> 29
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Inverted
repeat response element with spacer of 4
nucleotides

<400> 29
agcttaggtc acatgtgacc ta

22

<210> 30
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Inverted
repeat response element with spacer of 5
nucleotides

<400> 30
agcttaggtc acactgtgac cta

23

<210> 31
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Inverted
repeat response element with spacer of 6
nucleotides

<400> 31
agctttgaac tcaaaggagg tca

23

<210> 32
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: IR-M

<400> 32 agcttacgtc atgacgta	18
<210> 33 <211> 33 <212> DNA <213> Homo sapiens	
<400> 33 tagaatatga actcaaagga ggtcagttag tgg	33
<210> 34 <211> 33 <212> DNA <213> Homo sapiens	
<400> 34 tagaatatga actcaaagga ggtaagcaaa ggg	33
<210> 35 <211> 32 <212> DNA <213> Homo sapiens	
<400> 35 tagaatatta actcaatgga ggcagttagt gg	32
<210> 36 <211> 25 <212> DNA <213> Artificial Sequence	
<220> <223> Description of Artificial Sequence: Synthetic oligonucleotide for PCR	
<400> 36 gagcaattcg ccattactct gaagt	25
<210> 37 <211> 25 <212> DNA <213> Artificial Sequence	
<220> <223> Description of Artificial Sequence: Synthetic oligonucleotide for PCR	
<400> 37 gtccttgaaa tcttctacct ttctc	25

<210> 38
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide for PCR

<400> 38
gacgatttgg atctggacat gttgg

25

<210> 39
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide for PCR

<400> 39
tgaacttcat gaact

15

<210> 40
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 40
gttttcatct gagcgtccat cagct

25

<210> 41
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Illustrative
peptide

<400> 41
Arg Gly Lys Thr Cys Ala
1 5

<210> 42
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 42
tgttcttcat gttct

15

<210> 43
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 43
acaacttcat gaact

15

<210> 44
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Direct repeat
with spacer of 3 nucleotides

<220>
<221> modified_base
<222> (7)..(9)
<223> a, t, c or g

<400> 44
aggtcannna ggtca

15

<210> 45
<211> 16
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Direct repeat
with spacer of 4 nucleotides

<220>
<221> modified_base
<222> (7)..(10)
<223> a, t, c or g

<400> 45
aggtcannnn aggtca

16

<210> 46
 <211> 17
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Direct repeat
 with spacer of 5 nucleotides

<220>
 <221> modified_base
 <222> (7)..(11)
 <223> a, t, c or g

<400> 46
 aggtcannnn naggta

17

<210> 47
 <211> 15
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Direct repeat
 with spacer of 3 nucleotides

<220>
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 <222> (7)..(9)
 <223> a, t, c or g

<400> 47
 agttcannnt gaact

15

<210> 48
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 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Direct repeat
 with spacer of 4 nucleotides

<220>
 <221> modified_base
 <222> (7)..(10)
 <223> a, t, c or g

<400> 48
 agttcannnn tgaact

16